

I CLAIM:

1. A method for treating human tissue having an upper portion and a lower portion, comprising the steps of:

(a) using an optical crystal, generating a pulse of laser light, said pulse having a first portion of a first duration and a first wavelength and a second portion of a second duration and a second wavelength;

(b) directing said first portion of said pulse of laser light toward a target area for a first duration of time sufficient to raise the temperature of the lower portion of the human tissue to an extent sufficient to elicit a heating response that will accomplish hair reduction; and

(c) following said first duration, directing said second portion of said pulse of laser light toward said target area for a second duration of time sufficient to raise the temperature of the upper portion to an extent sufficient to elicit a heating response that will accomplish skin rejuvenation.

2. The method as defined in claim 1 in which said optical crystal comprises a Nd:YAP crystal and in which said first wavelength of laser light is approximately 1078nm and in which said second wavelength of laser light is approximately 1340nm.

3. The method as defined in claim 1 in which said optical crystal comprises a Nd:YAG crystal and in which said first wavelength of light is approxi-

mately 1064nm and in which said second wavelength of laser light is approximately 1310nm.

4. The method as defined in claim 1 including the further step of determining the period of relaxation of the human tissue following the exposure thereof to said first portion of said pulse of laser light and within said period, directing said second portion of said pulse of lighting toward said target area.

5. The method as defined in claim 1 in which said optical crystal comprises a Nd: YAP rod that produces said first portion of said pulse of light at a wavelength of about 1078nm with fluence of between about 10 and about 100 J/CM² and produces said second portion of said pulse of light at a wavelength of 1340nm with a fluence of between 1 and about 50 J/CM².

6. A method for treating human tissue having an upper dermis and the lower portion, comprising the steps of:

(a) using a Nd: YAP crystal, generating a pulse of laser light, said pulse having a first portion of a first duration and a wavelength of approximately 1078nm a second portion of a second duration and a wavelength of approximately 1340nm;

(b) directing the first portion of said pulse of laser light to a target area for a first duration of time sufficient to raise the temperature of the

lower portion of the human tissue to an extent sufficient to elicit a heating response that will accomplish hair reduction; and

(c) following said first duration, directing the second portion of said pulse of laser light to said target area for a second duration of time sufficient to raise the temperature of the upper dermis to an extent sufficient to elicit a heating response that will rejuvenate the skin within said target area.

7. The method as defined in claim 6 including the further step of determining the period of relaxation of the human tissue following the exposure thereof to said first portion of said pulse of laser light and within said period, directing said second portion of said pulse of light toward said target area

8. The method as defined in claim 6 in which said first portion of said pulse is produced with a fluence of between about 35 and 50 J/CM² for a duration of between about 10 and 20 milliseconds.

9. The method as defined in claim 6 in which said second portion of said pulse is produced with a fluence of between about 3 and 6 J/CM² for a duration of between about 3 and 6 milliseconds.

10. The method as defined in claim 6, further including the step of cooling the target area during said first duration of time.

11. An apparatus for use in treating the human skin comprising:

(a) a optical crystal having a first end and a second end;

(b) a pumping light source for irradiating pumping light on said optical crystal;

(c) a first high reflectivity mirror spaced apart from said first end of said optical crystal;

(d) a shutter disposed between said first high reflectivity mirror and said optical crystal;

(e) a second, high reflectivity mirror disposed between said shutter and said optical crystal;

(f) a third high reflectivity mirror spaced apart from said second, rotatable high reflectivity mirror and operably associated therewith;

(g) a focusing lens spaced apart from said second end of said optical crystal;

(h) an output coupler disposed between said focusing lens and said second end of said optical crystal; and

(i) a hand piece spaced apart from and operably associated with said focusing lens.

12. The apparatus as defined in claim 10 in which said optical crystal comprises a Nd:YAP crystal.

13. The apparatus as defined in claim 10 in which said optical crystal comprises a Nd:YAG crystal.

14. The apparatus as defined in claim 10 further including an optical fiber disposed between said focusing lens and said hand piece.

15. The apparatus as defined in claim 10 in which said hand piece includes cooling means for cooling the human skin.

16. An apparatus for use in treating the human skin comprising:

- (a) a optical crystal having a first end and a second end;
- (b) a pumping light source for irradiating pumping light on said optical crystal;
- (c) a first high reflectivity mirror spaced apart from said first end of said optical crystal;
- (d) a second high reflectivity mirror spaced apart from said first end of said optical crystal;
- (e) a shutter disposed between said first and second high reflectivity mirrors and said optical crystal;
- (f) a plurality of prisms disposed between said shutter and said optical crystal;
- (g) a focusing lens spaced apart from said second end of said optical crystal;
- (h) an output coupler disposed between said focusing lens and said second end of said optical crystal; and

(i) a hand piece spaced apart from and operably associated with said focusing lens.

17. The apparatus as defined in claim 16 in which said shutter comprises a two piston shutter.

18. The apparatus as defined in claim 16 in which said optical crystal comprises a Nd:YAP crystal.

19. The apparatus as defined in claim 16 further including an optical fiber disposed between said focusing lens and said hand piece.

20. The apparatus as defined in claim 16 in which said hand piece includes cooling means for cooling the human skin.